

REMARKS

The present application was filed on August 7, 2001 with claims 1-49. Claims 1-49 remain pending. Claims 1, 25 and 49 are the pending independent claims.

In the outstanding Office Action dated October 1, 2003, the Examiner rejected claims 1-49 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,696,964 to Cox et al. (hereinafter "Cox") in view of U.S. Patent No. 6,584,465 to Zhu et al. (hereinafter "Zhu").

With regard to the rejection of claims 1-49 under 35 U.S.C. §103(a) as being unpatentable over Cox in view of Zhu, Applicants assert that such claims are patentable for at least the reasons that claims 1, 25 and 49, from which claims 2-24 and 26-48 depend, are patentable.

As set forth therein, M.P.E.P. §2143 states that three requirements must be met to establish a prima facie case of obviousness. First, there must be some suggestion or motivation to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited combination must teach or suggest all the claim limitations. While it is sufficient to show that a prima facie case of obviousness has not been established by showing that one of the requirements has not been met, Applicants respectfully believe that none of the requirements have been met.

First, there is clear lack of motivation to combine the references. Applicants assert that no motivation or suggestion exists to combine Cox and Zhu in a manner proposed by the Examiner, or to modify their teachings to meet the claim limitations. For at least this reason, a prima facie case of obviousness has not been established. Applicants strongly believe that one ordinarily skilled in the art would not look to Zhu's method for retrieving digital patterns similar to a query pattern using color invariant properties to modify Cox's queryless database search method, or vice versa. That is, the teachings in each reference are directed to completely different environments; one (Cox) toward a multimedia search method that refines answers with user responses, the other (Zhu) toward a digital pattern retrieval system using color invariant properties. However, other than a very general and conclusory statement in the Office Action, there is nothing in the two references that reasonably suggests why one would actually combine the teachings of these two references.

The Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination "must be based on objective evidence of record" and that "this

precedent has been reinforced in myriad decisions, and cannot be dispensed with.” In re Lee, 277, F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that “conclusory statements” by an examiner fail to adequately address the factual question of motivation, which is material to patentability and cannot be resolved “on subjective belief and unknown authority.” Id. at 1343-1344.

In the Office Action at page 3, the Examiner provides the following statement to prove motivation to combine Cox and Zhu, with emphasis supplied: “it would have been obvious to one [of] ordinary skill in the art at the time the invention was made to modify the multidimensional indexing of Zhu into Cox in order to provide a[n] intelligent searching system [which] would allow the system to learn from the sample set and be able to use the multidimensional indexing structures allowing for faster retrieval process.”

Applicants submit that this statement is based on the type of “subjective belief and unknown authority” that the Federal Circuit has indicated provides insufficient support for an obviousness rejection. More specifically, the Examiner fails to identify any objective evidence of record which supports the proposed combination.

Second, with respect to claims 1, 25 and 49, even assuming, *arguendo*, that the Cox and Zhu references can be combined, Applicants assert that there is no reasonable expectation of success in achieving the present invention through a combination of Cox and Zhu absent the teachings of the present invention. For at least this reason, a prima facie case of obviousness has not been established. Despite the assertion in the Office Action, Applicants do not believe that Cox and Zhu are combinable since it is not clear to one skilled in the art how one would combine them. There is no guidance provided in the Office Action. However, even if combined, they would not achieve the unique techniques of the claimed invention.

Third, Applicants assert that even if combined, the Cox and Zhu references, when considered either individually or in combination, fail to teach or suggest all of the limitations of claims 1, 25 and 49. For at least this reason, a prima facie case of obviousness has not been established.

Independent claims 1, 25 and 49 recite techniques for retrieving one or more items from at least one database in response to a query specified by a user via at least one example set. A scoring

function is constructed from the example set. The scoring function is operable for use with a multidimensional indexing structure associated with the database. One or more database items are retrieved that have the highest score as computed using the scoring function. These items are retrieved via the multidimensional indexing structure. The example set, in accordance with the present invention, is a collection of examples that the user deems as similar to each other with respect to some characteristics. The scoring function, in accordance with the present invention, assigns a numeric value, called a score, to each element of the feature space, or each attribute used to search the database. At least these features of the claimed invention are not taught or suggested by the prior art of record.

Cox discloses a multimedia database retrieval system which maintains a posterior probability distribution that each item in the database is a target of a search. The search method is queryless and its answer is refined with each user response. The set of user responses includes a series of displays and user actions. More specifically, a user model is built from a database of user selections and answers are refined instead of the query. Zhu discloses a method and system for search and retrieval of similar patterns. Zhu stores digital patterns and their representations in a database in terms of one or more color invariants. Zhu thus fails to supplement the deficiencies of Cox.

Cox teaches away from the present invention since it involves a queryless search method. The Cox/Zhu combination fails to disclose the retrieval of items in response to a query specified by a user via at least one example set. Further, while Cox discloses a function corresponding to the computed features of the images that determines the probability of a given image being selected, the Cox/Zhu combination fails to disclose a scoring function that is constructed from an example set provided in a query. In this regard, the “probability of the user selecting an image” set forth in Cox at col. 6, line 53, cannot be reasonably analogized to the scoring function, as suggested by the Examiner.

The Cox/Zhu combination also fails to disclose a multidimensional indexing structure associated with the at least one database and operable with a scoring function from an example set. Additionally, the Cox/Zhu combination fails to disclose the retrieval of database items having the highest score as computed using the scoring function. Instead, Cox discloses user selection of

images in search of a target image. Finally, the Cox/Zhu combination fails to disclose the retrieval of items via the multidimensional indexing structure.

For at least the above reasons, Applicants assert that a prima facie case of obviousness has not been established. According, favorable reconsideration and allowance of claims 1-49 are respectfully requested.

In view of the above, Applicants believe that claims 1-49 are in condition for allowance, and respectfully request withdrawal of the §103(a) rejection.

Respectfully submitted,



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TITLE: Image retrieval using distance measure

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Detailed Description Text - DETX (56):

For very large databases, computing the distance from the query image 30q to all other images 30 in the database 40 may take substantial time. Thus, ranking and, in turn, retrieval, may be undesirably slow. To obviate the problem, multi-dimensional search techniques may be employed to retrieve a subset of images lying in the neighborhood of the query image 30q in the feature space. Ranking according to the proposed distance measure may then be performed on this subset only.

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